REMARKS

Claims 1, 2, 4-9 and 11-27 are pending in this application.

Claims 1, 2, 4-9 and 11-27 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,445,489 (Jacobson) in view of U.S. Patent No. 3,668,106 (Ota), and further in view of U.S. Patent No. 6,222,513 (Howard). This rejection is respectfully traversed.

Applicants respectfully submit that none of Jacobson, Ota or Howard, singly or together, teaches or suggest the electrophoretic display device of claim 1.

A. Jacobson's Item 62 in not Between two Conductive Films

Jacobson describes an electrophoretic display that includes each of light-emitting layer 10, a photoconductive layer 12 and an electrophoretic layer 14. See the Abstract. In the Office Action, it was alleged that Fig. 9 of Jacobson described an electrophoretic display device that included a unitary spacer layer 62 sandwiched between two conductive film substrates, at least one of which is transparent. Applicants respectfully disagree with this characterization of the teachings of Jacobson. Specifically, item 62 in Jacobson's Fig. 9, although described to possibly be a clear spacer at column 10, lines 57-59, is not sandwiched between two conductive film substrates as alleged in the Office Action.

In Fig. 9 of Jacobson, an embodiment is illustrated in which the electrophoretic display device is used together with an external paper document 64 in order to generate an image. The electrophoretic display of this embodiment is described and shown in Fig. 9 as including paper document 64, light diffusor 62, fenestrated light-emitting layer 60, photoconductive layer 12, electrophoretic layer 14, clear top electrode 16, and a source of voltage 18. See col. 10, lines 52-59. While Jacobson indicates that the light diffusor 62 may be a clear spacer layer in Fig. 9, such does not teach or suggest the electrophoretic display device of claim 1, contrary to the assertion of the Patent Office, because such clear spacer 62

in Fig. 9 of Jacobson would not be between two conductive film substrates as required for the electrophoretic display device of present claim 1. Spacer 62 is next to bottom paper document 64 in Fig. 9 of Jacobson, and this paper layer is neither a part of the device nor a conductive film.

B. Ota's and Howard's Spacer Sheets Do not Have the Claimed Structures

The Patent Office turned to the teachings of Ota as allegedly suggesting replacing the spacer 62 in Fig. 9 of Jacobson with a different spacer such as described in Ota, and further turned to the teachings of Howard as allegedly suggesting the specific structures of the spacer sheet as recited in present claims 1 and 6. Applicants respectfully submit that even if the art references were to have been combined as alleged in the Office Action, the claimed subject matter would not have been achieved.

First, Applicants again respectfully submit that even if the clear spacer 62 in Fig. 9 of Jacobson were to have been replaced with a different spacer, the electrophoretic display device of independent claims 1 and 6 still would not have been achieved because, as discussed above with respect to Jacobson, such spacer layer would not be sandwiched between two conductive film substrates as required in claims 1 and 6.

1. Claims 1, 2, 4, 5 and 11-17

Independent claim 1 recites an electrophoretic display device comprising a spacer layer sandwiched between two conductive film substrates, at least one of which is transparent. The spacer layer defines a multiplicity of individual reservoirs within the display device, each of the individual reservoirs being filled with a display liquid, wherein the spacer layer comprises at least one pocket sheeting layer comprised of at least two sheets joined together and containing a pattern of pockets within the joined sheets, the pockets defining the individual reservoirs. This embodiment of the presently claimed invention is illustrated in Figs. 4-8 of the present specification.

With respect to claim 1, Ota further fails to teach or suggest a spacer layer comprising at least one pocket sheeting layer comprised of at least two sheets joined together and containing a pattern of pockets within the joined sheets, which pockets define individual reservoirs of the display device. At best, Ota describes a spacer sheet 41 with multiple holes 42 therein that define separate suspension units in an electrophoretic suspension layer 22. See Figs. 12a-12c and 13 of Ota. However, such sheet with holes therein clearly fails to teach or suggest a spacer layer comprising at least one pocket sheeting layer being comprised of at least two sheets joined together and containing a pattern of pockets within the joined sheets, each of the pockets being filled with a display liquid, as required in present claim 1.

The Patent Office alleged that Howard describes a spacer layer at column 3, lines 45-62 and in Figure 3 comprised of two sheets joined together and containing a pattern of pockets of individual reservoirs therein. Applicants submit that this characterization of Howard is not accurate. Howard describes an electric paper sheet including a sheet 300 having cavities that are each filled with one bichromal sphere (i.e., a sphere having two colors, one on each half of the sphere), the sheet 300 having on each side an encapsulating layer 302, 304, at least one of which includes thereon charge-retaining islands 306. See Figure 3. As clear from viewing Figure 3, and the additional side profiles of Figures 6 and 7, the sheet 300 having the cavities that house the bichromal gyricon spheres therein is a single sheet. The cavities ("pockets") are not formed through joining of two sheets together as in the electrophoretic display device of present claim 1. Thus, Howard also does not teach or suggest the spacer layer of claim 1.

Moreover, Applicants submit that one of ordinary skill in the art would not have turned to the teachings of Howard with respect to the teachings of Jacobson and Ota. This is because Howard describes a display device employing bichromal gyricon spheres (i.e., a twisting ball display). As is clear from Howard, it is well known that in such devices, the

balls must each be loaded into an individual cavity in which the ball can spin to display one of its two colors to the viewer. The cavities shape must be strictly controlled such that the ball is free to spin within the cavity, but is not free to substantially move (e.g., laterally or vertically) within the cavity. Such displays are formed by, for example, loading the balls into a thin polymer sheet, and then allowing the sheet to absorb a material such as plasticizer that allows the polymer to slightly expand around each of the balls. See, e.g., U.S. Patent No. 4,143,103. These single sheets containing twisting gyricon balls therein thus are required to be quite different from, and to operate quite differently from, the electrophoretic display such as described in Ota. One of ordinary skill in the art looking for spacers similar to Ota would thus not have turned to Howard. Further, the alleged basis for the combination of Ota and Howard in the Office Action, i.e., to achieve improved grey scale, highlight color and full color, is a function of the use of twisting balls as in Howard, and would not be achieved in Ota merely by attempting to use the cavity-containing sheet of Howard (presumably absent the twisting balls) as the spacer in Ota. Thus, these teachings of Howard would not have motivated one to have made the combination, contrary to the assertion in the Office Action.

Finally, it must be noted that it is not seen how one of ordinary skill in the art could use the cavity-containing sheet 300 of Howard in the display device of Ota or Jacobson. In particular, Ota uses a colored liquid within the cavities of the spacer. See, e.g., column 3, lines 40-50 of Ota. The cavity-containing sheet of Howard is made with the balls therein as discussed above, which balls support formation of the cavity. It is not seen how the balls could be removed from the sheet of Howard and/or how the fluid of Ota could be inserted in the sheet cavities. As seen in Howard, the cavities are not open to the outside of the single sheet they are in, and are thus not accessible for insertion of a fluid therein. Again, this is why the spacer of present claim 1 is required to be made of two sheets joined together, unlike

Howard, so that the display fluid can be inserted into the pockets during formation of the spacer.

For all the foregoing reasons, Applicants submit that the teachings of Jacobson, Ota and Howard would not have led one to present claim 1, or claims dependent therefrom.

2. **Claims 6-9 and 18-25**

Claim 6 of the present application recites an electrophoretic display device comprising a spacer layer sandwiched between two conductive film substrates, at least one of which is transparent, the spacer layer defining a multiplicity of individual reservoirs within the display device that are completely separated from each other, each individual reservoir being filled with a display liquid, and the spacer layer being selected from the group consisting of:

(a) a screen comprised of fibers in which holes within the screen define the individual reservoirs;

(b) a laser punched spacer comprised of a laser ablatable material in the form of a sheet having holes laser punched therein;

(c) an etched photoresist layer comprised of a photoresist material, formed upon one of the conductive film substrates, and having a plurality of openings etched through the photoresist material; and

(d) a composite etched layer comprised of a composite of two photoresist layers each comprised of a photoresist material that sandwich a conductive film with holes etched through the composite.

Applicants respectfully submit that none of Jacobson, Ota or Howard would have led one of ordinary skill in the art to any of the embodiments recited in claim 6.

In the Office Action, it was alleged that Howard described the spacer structures recited in present claim 6 at column 6, lines 42-63. Applicants strenuously disagree.

At column 6, lines 42-63, Howard describes how the charge-retaining islands 306, separated by channels 303 (see Figure 3), may be formed on the encapsulating layers. This description in Howard thus does not even relate to forming cavities, or pockets, in a sheeting layer. The methods described here in Howard merely describe forming charge-retaining islands upon a surface. Nothing here would have led one to any of the spacers having the structures described in present claim 6.

Further, nothing in any other portion of Howard teaches or suggests the spacer structures recited in present claim 6.

For all the foregoing reasons, Applicants submit that the teachings of Jacobson, Ota and Howard also would not have led one to present claim 6, or claims dependent therefrom.

C. Conclusion

For all the foregoing reasons, Applicants respectfully submit that Jacobson, Ota and Howard, whether considered singly or together, would not have led one of ordinary skill in the art to the claimed subject matter. Reconsideration and withdrawal of this rejection are respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 2, 4-9 and 11-27 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

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